Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.

ERS-598

DECISIONMAKING IN THE OILSEED PROCESSING INDUSTRY

SPEECH BEFORE THE 21ST ANNUAL CONFERENCE OF COOPERATIVE SOYBEAN AND COTTONSEED OIL MILLS, LAS VEGAS, NEVADA, MARCH 10, 1975

ERS-598 File Copy

ECONOMIC RESEARCH SERVICE U.S. DEPARTMENT OF AGRICULTURE

DECISION MAKING IN THE OILSEED PROCESSING INDUSTRY *

by

Harry O. Doty, Jr.
U. S. Department of Agriculture
Economic Research Service
Washington, D. C. 20250

It is indeed an honor and pleasure to participate in this 21st Annual Conference of Cooperative Soybean and Cottonseed Oil mills. Through the years I've had the privilege of meeting a number of you in person and visiting several of your mills. The topic given me today "Decision Making In the Oilseed Processing Industry" is too big for one person to cover all of its facets. I have chosen some areas where I hope to shed some light. Let us first examine the current status of the oilseed processing industry.

Soybean Crushings

Virtually all soybean processing in the United States uses the solvent extraction technique. U.S. soybean crushings have increased tremendously in the past 20 years. In fact, these crushings have more than tripled from 242 million bushels in the 1954/55 season to 821 million bushels in the 1973/74 season. Soybean crushings this season are expected to drop to about 750 million bushels. Over the years soybean crushings and production of oil and meal have continued upward in the Corn Belt. However, the importance of the Corn Belt in the overall production of soybeans and its products has dropped greatly. In 1973/74 the Corn Belt accounted for only 45 percent of all soybean crushings whereas in 1954/55 it accounted for about 82 percent. Where then, has the great increase in soybean crushings taken place? In the Delta. In 1954/55, Delta States accounted for only one percent of the total soybean crushings, whereas in 1973/74 they were responsible for 14 percent. There has also been a large increase in soybean crushings in "all other States." We believe that a large amount of this increase is in the Southeastern States.

As one examines the U.S. soybean crushings by months over the past 15 years, it becomes apparent that the soybean crushing industry is not as seasonal as it used to be. There is a more even distribution of the crush throughout the year. It used to follow a bell shaped curve reaching its peak in January. Now soybean crushing starts off slow in September then builds up to a level and sustains it for the remainder of the crushing year. One reason for this change is due to the large expansion of the poultry industry in the last 15 years. This industry is responsible for a large demand of high protein feeds throughout the year.

Despite the large increase in soybean crushings in the U.S., there has also been a four-fold increase in U.S. soybean exports in the past 15 years--from 135 million bushels in 1960/61 to 542 million bushels in 1973/74.

---

* Speech presented at the 21st Annual Conference of Cooperative Soybean and Cottonseed Oil Mills, Las Vegas, Nevada, March 10, 1975.

Oil Yields

Yields of oil per bushel of soybeans crushed have shown a slightly downward trend in the past 15 years. This is primarily due to a change in Bureau of the Census reporting procedures whereby degummed soybean oil is reported as crude oil. Yields in the past few months are at their lowest level--10.3 pounds of oil per bushel of soybeans. What is surprising is that soybean oil yield has not increased. First, despite the new and improved processing equipment that has been developed and all the new plants that have been built (some replacing outmoded plants) there has been little or no increase in soybean oil yield. Secondly, much breeding work has been carried out to improve soybeans. This has resulted in the commercial growing of many new varieties having higher yields per acre but with apparently no increase in yield of oil per bushel. Research has shown that oil content of soybeans decreases as the average temperature declines. Minnesota, which is the main producing state north of the Corn Belt, made up about the same proportion of soybean crushings in 1973/74 as it did in 1954/55. One would then expect an increase in soybean oil yields in recent years because of the large increases in soybean production that has taken place south of the Corn Belt; but this has not materialized.

Value of Products

Following World War II, soybean products, soybean oil and meal, were about equal in value. In recent years the value of soybean meal has been about 60 percent of the value of the soybean products, while the oil provided about 40 percent. For the 1973/74 season soybean oil and meal were once again close to being of equal value. Last year, soybean oil was more valuable (55 percent) than the meal. Therefore, the values of these products are not disproportionately out of balance. Under such conditions it is really not accurate to refer to one product as the prime one and the other as a byproduct--they really are joint products.

Oilseed Processing Mills

The number of soybeans or cottonseed processing mills depends on the definition used. Under our ERS definition, a soybean oil mill is any mill that crushes soybeans. However, under the Bureau of the Census definition of a soybean oil mill, soybeans have to be the primary oilseed crushed. A similar type definition also applies to cottonseed oil mills. Therefore, ERS and Bureau of the Census arrive at different figures in describing the oilseed crushing industry. In 1967 we show 135 soybean oil mills while Census shows 102 and in 1972 the figures are 117 and 94, respectively. You will note, however, that under either definition the number of soybean processing plants is declining. Since 1972 we find the number of soybean oil mills still declining--with only 108 operating in 1974. In addition there are about 100 cottonseed oil mills, 5 flaxseed processing plants, and about 30 peanut crushers.

Processing Capacity

The processing capacity of soybean oil mills has been rising rapidly in the U.S. In 1963 processing capacity was 575 million bushels of soybeans and now 12 years later for the 1974/75 season it is almost double this figure.

However, the soybean processing industry is running sharply below its estimated annual capacity of 1.1 billion bushels. Crushings this marketing year are expected to total around 750 million bushels, down sharply from the 821 million of 1973/74. In fact, this year's estimated ratio of utilized capacity to total capacity of 68 percent is the lowest in over 20 years. It is my understanding that some soybean processing plants have actually shut down. Back in the 1969/70 season, the industry operated at 92 percent of capacity. This was a very high ratio because the industry usually operates at about 80 percent of capacity.

Processing capacity per mill has increased more than total processing capacity. The processing capacity per mill in 1963 was 4.4 million bushels and this has risen to 10.2 million bushels for the present season. This has been due to expanding capacity at existing mills and the building of new mills of larger capacity. The industry trend has been toward fewer but larger facilities.

Processing Margins

Processing margins were extremely good during the past two years. Record margins were posted in 1973/74, when they averaged 72 cents per bushel. In 1972/73 processing margins averaged 59 cents per bushel. Margins for each of these years were higher than for any other year in the past 25 years and coming back to back is even more phenominal. An unusual set of circumstances caused this, so it is unlikely that it would ever happen again. A strange facet of the situation was that these large margins occurred at a time when the soybean processing industry had excess capacity.

Processing margins this year are down sharply. They dropped from 18 cents per bushel in September to 10 cents in December. During this 4-month period they averaged 15 cents compared with 97 cents a year ago.

The profits that have been made by the oilseed processing industry in the last 2 years have not escaped the eyes of the opportunists. We have had more inquiries regarding the building of new oilseed processing plants in the past 3 months than any time I can recall. This, to me, has a real foreboding of possible rough times for the oilseed processing industry in the future. It all depends upon how many of these interested parties translate their investigations of the oilseed processing industry into action and actually build oilseed processing facilities.

Components of Oil Products Margins

Cost and profit components for 1973 were estimated for three vegetable oil products--salad and cooking oil, margarine, and vegetable shortening. Soybean oil constitutes a large portion of the fats and oils used in the manufacture of these products. For example, approximately 80 percent of the oil used in making margarine is soybean oil. Because of this we used costs of milling and processing soybean oil to represent all of the oils used in the manufacture of these oil products.

In 1973, the retail price of a 24-ounce bottle of salad and cooking oil averaged 70.6 cents. The farm value of the soybean oil represented in 24

ounces of salad and cooking oil was 21.9 cents. Thus, the farm-retail spread is 48.7 cents. Most of this spread is in milling and processing, with over 9 cents in packaging. The unallocated figure is high due to the rise in soybean prices. Most of the labor and energy costs were in the processing operations which take place after crushing. The cost and profit components in 1973 for margarine and vegetable shortening were similar to that reported for salad and cooking oils.

POSSIBLE CHANGES AHEAD FOR THE OILSEED CRUSHING INDUSTRY

Now let's take a look at some of the factors that might cause changes to take place in the oilseed processing industry in the future. The oilseed industry like many others seems to be changing constantly. These changes will continue to take place in the future. You must consider the alternatives of each situation and be responsive to change so that your companies will remain a healthy, thriving part of a dynamic industry. What I'm saying, is to be progressive and not complacent or satisfied with the status quo. This applies to each of you even though your present operation may be efficient, making a good return on investment, and serving your membership well. As we examine the situation today, there are probably more far-reaching changes for the oilseed processing industry on the horizon now than ever before. Let us examine some of these factors which may affect your industry so dramatically.

Increased Food Production

As an outgrowth of last fall's World Food Conference in Rome, we were recently asked to develop a position paper on the kinds of research needed to produce more food in the U.S. from each of the oilseeds. Under this assumption, little attention would be paid to byproducts such as cottonseed, corn oil, tallow, etc., since the quantity of byproducts available is contingent upon production of the main crop. However, there are cases where byproducts could make a new and important contribution to our food supply. For example, the production of gossypol free cotton would make all cottonseed meal presently going into ruminant feeds available for all feed and edible uses. Under conditions of all-out food production, acreage planted to cotton might drop drastically so that food crops could be grown on cotton land and we would rely more on synthetics to supply our fiber needs. If it were decided that we needed to produce more low-cost edible vegetable protein then the logical choice for increased protein production would be soybeans. Yield of protein per acre is very high for soybeans and soybean protein has the best amino acid balance of all the vegetable proteins. If it were decided that we needed more oil, then sunflowers might be the logical choice because of its high yield of excellent quality oil per acre. If we wanted to maximize the production of both edible protein and oil then peanuts might be the crop for us to expand provided present price support programs could be dropped or modified. The possible policy changes mentioned here could be brought about by international or governmental bodies moving to increase world or U.S. food production so as to either provide adequate food or prevent mass starvation. As you might imagine, the effect these changes would have on the oilseed crushing industry would be tremendous. For example, you might be crushing sunflowers or peanuts instead of the soybeans or cottonseed which you presently crush.

Back in the real world there are economic changes taking place in the production and use of the various oilseeds, fats, and oils caused by many factors such as increases in yields of various crops, rising oil content of some oilseeds, changes in dietary patterns, improved equipment and new processing methods, etc. These factors all affect the farmer's decision on which crops to grow.

Palm Oil

In the near future palm oil probably presents the biggest threat to soybean and cottonseed oil markets both here in the U.S. and abroad. Palm oil is produced from palm nuts and once the palm trees start to bear fruit they are productive for many years with few costs sustained except for harvesting. Many of the palm nut orchards presently coming into production were financed by the World Bank with expected returns based on a world price for palm oil of 8 cents a pound. Therefore, with the price of palm oil recently being so much higher than this figure, it presents a very attractive situation and is encouraging a further expansion of palm nut orchards. Also, improvements have recently been made in the refining of palm oil such that it contains less red color. This allows it to be used in a wider range of food fat products.

Sunflowers

On the domestic front, sunflowers appear to have much potential as an oilseed crop in the United States. A few co-op oil mills along with several other crushing mills will process sunflowers this year.

Oil type sunflowers were first grown in the U.S. in 1967. Few crops are as widely adaptable as sunflowers. Since 1967, total U.S. production has expanded rapidly with over 600,000 acres planted in recent years. Sunflowers yield more than twice as much oil as soybeans--about 42 percent oil compared with 18 percent. Soybeans yield about 1,650 pounds an acre to sunflowers' 1,100 pounds. Under these conditions, sunflowers produce about 460 pounds of oil per acre compared with less than 300 pounds for soybeans. This relationship between sunflowers and soybeans is expected to change dramatically in the next few years to favor sunflowers even more. Hybrid sunflowers are in their infancy. A number of U.S. hybrid varieties will be available for commercial production for the first time in 1975. Hybrids are expected to increase sunflower yields at least 25 percent. Since sunflowers are second to soybeans as the world's leading oil crop, the effect of higher yields due to growing hybrid sunflowers in countries other than the U.S. could have considerable effect on increasing world edible oil production in the next few years.

Sunflower oil is highly regarded as a salad oil, gives excellent performance as a cooking oil and shortening, and is used to manufacture premium-grade margarines which take advantage of its high ratio of polyunsaturated fatty acids.

Based on cotton farmers' intentions in 1975 they are going to reduce cotton acreage 32 percent. If they follow through with these plans, cottonseed production would be one million tons below last year's 4.7 million tons. This offers a real opportunity for cottonseed crushers who want to secure sunflower seed for greater utilization of plant capacity.

Peanuts

Another potential competitor of soybeans is the peanut. One hears little about this because peanuts are under a price support umbrella. Under this program, domestic peanuts are produced for the edible market and sell at roughly double the world market price, which is for crushing stock. However, the peanut price support program has received much criticism because of increased Government cost in recent years and there is a greater likelihood than ever before that it will be changed or eliminated. If this comes to pass, peanuts would become a real competitor with soybeans as a number of peanut farmers have told me that they can produce peanuts at the world price. You ask, how is this possible? It is due to the tremendous increase that has taken place in peanut yields. The average yield of peanuts in 1974 of 2,491 pounds per acre is considerably more than double that in 1955-59. The average ratio of increase during this period is 6 percent. Continued yield increases are expected. The 1974 average yield of peanuts for the State of Georgia was 3,000 pounds per acre. Based on this yield per acre, peanuts would supply about 3½ times as much oil per acre as soybeans and this is an oil that sells for a premium over soybean oil.

Brazilian Soybean Production

Soybean production in Brazil has expanded rapidly in recent years. Brazil is now the number two soybean producer in the world exceeded only by the United States. In 1969 Brazil produced just over one million metric tons of soybeans. By 1974 their production of soybeans had increased to 7.4 million tons and in 1975 the Department is forecasting their production at 9.2 million tons. Soybeans are adaptable to many growing areas of Brazil. We expect soybean production in Brazil to continue to increase sharply by expanding plantings. The major impact of Brazilian production will be on our export market for soybeans. The effect on the U.S. oilseed processing industry will depend on political decisions made by Brazil. If they decide to expand their oilseed processing industry and sell oil and meal in world markets, then they will directly compete with U.S. oilseed processors for these world markets.

Edible Soy Protein

There has been a change toward more oilseed processors producing edible soybean protein products, particularly soy flour and grits, and extruded textured soy protein. We envision that this trend will continue in the future. Consumer interest and consumption of edible soybean protein products have increased greatly in the last couple of years. Many factors have come into play to bring this about.

In recent years, a big boost was given to the use of edible soy protein by the development of an inexpensive texturizing process. Another boost took place when the USDA School Lunch Program allowed 30 percent textured soy protein to be added to beef to make a beef-soy patty in February 1971. Then, U.S. edible soy protein use for its protein value was here to stay. Use of edible soy protein in the School Lunch Program has continued to grow ever since. Production of soy flour and grits was 326 million pounds in 1963 and increased to 474 million pounds in 1972.

More recently, when the price of meats became high, retail consumers' use of edible soy protein in meat patties produced a thriving market, and edible soy protein capacity was greatly expanded in 1974. Now that meat prices are much lower, there has been a slackening in this market resulting in unused capacity. We expect that this market will rebound with new vigor the next time meat prices reach a high level. Institutional markets are holding up well and we anticipate that this will be the major domestic market for edible soy protein products for some time to come.

In the offing is a new boost to textured edible soy protein use. The Army is on the verge of buying a frozen beef-textured edible soy protein product. They have laid out their specifications, patterned after those for the school lunch program, using 25 percent textured soy protein in their beef-soy patties instead of 30 percent.

Practically all of the edible vegetable protein marketed so far has been based on soybeans. In the future, there may be similar products produced from cottonseed, peanuts, safflower, and sunflower. Some of you are actively engaged in bringing forth these new products.

Polyunsaturated Fatty Acids

Another change which could have far-reaching effects on the vegetable oil processing industry is that of concern over blood cholesterol and heart attacks. There has, in recent years, been a steady market for premium priced fat products high in polyunsaturation. It has been shown experimentally in humans that blood cholesterol levels can be reduced by decreasing total fat intake and substituting polyunsaturated fatty acids for saturated ones. Therefore, many people eat polyunsaturated fat products because they may have high blood cholesterol levels, are doing it under doctor's orders, or eat them as a preventative measure--"they'd rather be safe than sorry." If it were scientifically established that high cholesterol levels cause heart attacks, rapid expansion in the polyunsaturated fat market would take place almost overnight. Then you, as an oilseed crusher, might want to shift from crushing soybeans and cottonseed to safflower and sunflower and you might have to contract with farmers to obtain these oilseeds for crushing.

The potential market for the saturated vegetable oils, such as coconut oil, is not as promising as a few years ago. In fact, some of them are being excluded from use by some institutions on the basis of their saturation. The USDA School Lunch Program is limiting the use of saturated vegetable fats in many items in their engineered foods program. For example, in their filled cheese product the lipids shall contain not more than 50 percent of their fatty acids in a saturated form. In their breakfast cake at least 5 percent of the total calories shall be from linoleic acid.

Refining

There are approximately 100 edible fats and oils refineries in the U.S. Changes are taking place in the structure of the refining industry with an increasing number of crushers putting in refinery operations. Some soybean crushers are only going part way--putting in a degumming operation. Oilseed crushers feel that the refining ability gives them more market flexibility.

They can market not only crude oil, but also degummed soybean oil or completely refined oil suitable for use in manufacturing a number of fat products. We are undertaking a survey of edible fats and oils industry refining capacity similar to the one completed in 1967. [1]

New Processing Methods and Equipment

I will only mention in passing the need for crushers to keep abreast of the latest techniques and processing equipment available. With the number of oilseed processing clinics and workshops held, I believe that this industry is ahead of most industries in this respect. You are faced with extracting oil from oilseeds with inputs of labor, electrical energy, steam, fuel and solvent being more expensive and in some cases scarce. Now is a good time to think about innovations.

OIL CROPS RESEARCH PROGRAM

In addition to the research activities already mentioned, we have other research which may be of interest to you. These I will just briefly mention.

A variety of information is needed to assist decision makers to cope with a continuously changing economy. Our research program is designed to provide information at critical decision points, from the production of oilseeds to the consumption of their products. To aid in this discussion, let's visualize the various activities involved in an economic system. The functions performed are (1) production, (2) transportation, (3) storage, (4) processing, (5) manufacturing, and (6) consumption. A change at any one of these points will cause adjustments to take place throughout the system. To stay on top of the situation we maintain a large volume of data associated with oilseeds and competing products. This includes such information as acreage, yield, stocks, exports, imports, domestic consumption by various uses and prices of the various products. Analyses of these data are published in the Fats and Oils Situation.

We are currently developing the routines and procedures for automating price and quantity data for fats and oils. Once this is accomplished we will be able to generate and publish statistical bulletins annually. In addition, the data will be accessible to researchers for analytical purposes. Plans call for the development of short term forecasting procedures which will be linked to the data bank.

Competition for resources in the production sector is being evaluated. Costs of production data are being developed for the major producing regions and used to analyze the competition among oilseeds and competing crops. A feed grain-livestock-protein model is being developed to analyze the impact of changes in the livestock sector on the feed-grain-protein complex. Also, export demand for oilseeds and oilseed products is being analyzed to determine the impact of changes in foreign production and consumption patterns on the U.S. oilseed industry.

---

[1] U.S. Edible Fats and Oils Refining Capacity, 1967, ERS-391, U.S. Department of Agriculture, Economic Research Service, September 1968.

Hopefully, the results from these research activities will improve the information used to make decisions, and thus will improve the performance of the production, processing, and distribution systems.

Today we have examined the status of the oilseed processing industry and some of the major factors which might have some far reaching effects on the industry in the future. If the industry continues to be progressive and meet the challenges head on, I predict the oilseed processing industry in the U.S. will have a bright future.

Soybean crushings, oil and meal production by Regions and States,
year beginning September, selected years, 1954-73

Region and State	Soybean crushings					Soybean oil production					Soybean meal production				
	1954	1959	1964	1969	1973 1/	1954	1959	1964	1969	1973 1/	1954	1959	1964	1969	1973 1/
	--Million bushels--					--Million pounds--					--1,000 tons--				
Corn Belt:															
Illinois	100.8	122.1	139.2	174.9	172.2	1,135	1,380	1,546	1,915	1,882	2,228	2,779	3,290	4,096	4,033
Iowa	40.8	66.7	81.4	99.4	120.9	433	728	866	1,029	1,288	959	1,595	1,986	2,379	2,874
Indiana	25.0	26.6	43.9	52.7	48.5	278	298	489	554	505	589	624	1,045	1,246	1,145
Ohio	23.9	35.8	31.8	2.6	2/	252	401	346	27	2/	562	840	769	62	2/
Missouri	6.9	2/	2/	28.2	30.4	75	2/	2/	294	332	161	2/	2/	670	732
Total	197.4	251.2	296.3	357.8	372.0	2,173	2,807	3,247	3,819	4,007	4,499	5,838	7,090	8,453	8,784
Percent of U.S.	82	64	62	49	45	83	65	62	49	45	81	64	62	48	45
Lake and Plains:															
Minnesota	15.6	30.0	28.1	41.7	58.3	159	318	286	426	623	364	696	665	989	1,384
Kansas	2/	2/	2/	25.2	33.3	2/	2/	2/	271	285	2/	2/	2/	590	616
Nebraska	2/	2/	2/	2/	2/	2/	2/	2/	2/	2/	2/	2/	2/	2/	2/
Total	15.6	30.0	28.1	66.9	91.6	159	318	286	697	908	364	696	665	1,579	2,000
Percent of U.S.	6	8	6	9	11	6	7	5	9	10	7	8	6	9	11
Total Central States	213.0	28.2	324.4	424.7	463.6	2,332	3,125	3,533	4,516	4,915	4,863	6,534	7,755	10,032	10,784
Percent of U.S.	88	71	68	58	56	89	72	68	58	55	88	71	68	57	56
Delta:															
Arkansas	.8	8.9	4.1	50.2	19.9	7	96	45	539	167	19	206	100	1,206	362
Mississippi	.8	10.0	7.4	34.1	30.4	8	111	83	376	368	19	234	176	806	783
Tennessee	2/	32.1	32.4	47.2	57.7	2/	347	351	501	561	2/	735	766	1,131	1,223
Total	1.6	51.0	43.9	131.5	108.0	15	554	479	1,416	1,096	38	1,175	1,042	3,143	2,368
Percent of U.S.	1	13	9	17	14	1	13	9	18	13	1	13	9	18	12
Atlantic:															
North Carolina	.6	2.7	2/	5.9	2/	1	26	2/	62	2/	1	62	2/	140	2/
Total	.6	2.7	2/	5.9	2/	1	26	2/	62	2/	1	62	2/	140	2/
Percent of U.S.	---	1	---	---	---	---	1	---	---	---	---	1	---	1	---
Other States 3/	26.7	59.1	110.8	195.2	249.7	282	635	1,203	1,859	2,831	629	1,394	2,642	4,143	6,218
Percent of U.S.	11	15	23	25	30	10	14	23	24	32	11	15	23	24	32
United States	241.9	394.0	479.0	737.3	821.3	2,630	4,340	5,215	7,853	8,842	5,531	9,165	11,439	17,458	19,370

1/Preliminary. 2/Included in "All Other States." 3/In some years includes data for individual States shown separately above but listed by Census as "Other States."

Soybean crushings, by months, actual and percent of total, 1960-74

Year	September	October	November	December	January	February	March	April	May	June	July	August	Total 1/
						--Million bushels--							
						ACTUAL							
1960	26.9	35.6	37.1	38.1	39.0	34.6	34.8	33.0	34.3	31.9	31.0	30.0	406.1
1961	23.0	36.5	38.5	38.7	41.0	36.3	38.8	36.5	38.6	34.3	34.8	34.4	431.4
1962	30.4	39.9	42.8	42.8	42.8	38.8	41.9	36.0	41.1	39.0	38.2	39.0	472.8
1963	32.2	40.5	39.4	39.2	36.0	34.6	33.8	35.3	36.3	35.0	37.3	37.2	436.8
1964	36.3	44.3	43.6	43.2	43.0	37.8	40.0	38.2	40.9	37.1	36.6	37.1	479.0
1965	30.4	44.1	48.2	48.9	50.2	45.1	49.4	43.9	50.1	44.7	42.0	40.4	537.5
1966	35.3	45.2	49.6	48.9	50.6	44.6	46.9	47.5	49.2	48.8	47.5	45.4	559.4
1967	42.2	50.4	51.6	50.6	51.2	48.6	48.3	44.6	48.8	47.5	47.6	44.9	576.4
1968	38.2	54.7	55.6	52.2	49.9	45.0	54.6	50.4	54.5	50.6	52.1	48.2	605.9
1969	47.5	61.8	62.0	63.1	62.9	58.8	62.9	62.5	67.4	63.7	62.7	62.0	737.3
1970	53.3	66.8	65.9	68.1	67.7	60.1	63.6	63.8	63.8	61.1	62.4	63.6	760.1
1971	54.5	59.5	59.8	64.0	63.9	60.2	63.9	58.5	63.0	57.1	58.2	57.9	720.5
1972	52.2	66.8	70.7	69.2	70.6	64.8	64.4	58.2	61.7	52.2	44.5	46.5	721.8
1973	41.4	62.8	71.8	72.8	74.7	70.4	75.8	69.6	71.7	69.4	72.2	68.9	821.3
1974	53.6	61.6	60.8	60.4									
						PERCENT OF TOTAL							
1960	6.6	8.8	9.1	9.4	9.6	8.5	8.6	8.1	8.4	7.9	7.6	7.4	100.0
1961	5.3	8.5	8.9	9.0	9.5	8.4	9.0	8.5	8.9	8.0	8.1	8.0	100.0
1962	6.4	8.4	9.1	9.1	9.1	8.2	8.9	7.6	8.7	8.2	8.1	8.2	100.0
1963	7.4	9.3	9.0	9.0	8.2	7.9	7.7	8.1	8.3	8.0	8.5	8.5	100.0
1964	7.6	9.2	9.1	9.0	9.0	7.9	8.5	8.0	8.5	7.7	7.6	7.7	100.0
1965	5.7	8.2	9.0	9.1	9.3	8.4	9.2	8.2	9.3	8.3	7.8	7.5	100.0
1966	6.3	8.1	8.9	8.7	9.0	8.0	8.4	8.5	8.8	8.7	8.5	8.1	100.0
1967	7.3	8.7	9.0	8.8	8.9	8.4	8.4	7.7	8.5	8.2	8.3	7.8	100.0
1968	6.3	9.0	9.2	8.6	8.2	7.4	9.0	8.3	9.0	8.4	8.6	8.0	100.0
1969	6.4	8.4	8.4	8.6	8.5	8.0	8.5	8.5	9.1	8.6	8.5	8.4	100.0
1970	7.0	8.8	8.7	9.0	8.9	7.9	8.4	8.4	8.4	8.0	8.2	8.4	100.0
1971	7.6	8.2	8.3	8.9	8.9	8.4	8.9	8.1	8.7	7.9	8.1	8.0	100.0
1972	7.2	9.3	9.8	9.6	9.8	9.0	8.9	8.1	8.5	7.2	6.2	6.4	100.0
1973	5.0	7.6	8.7	8.9	9.1	8.6	9.2	8.5	8.7	8.4	8.8	8.4	100.0
1974													

1/Total may not add due to rounding.

[illegible]ans: Crushings and yields of oil meal per bushel crushed, exports and price, by months, crop year , 1958-74

Year beginning September	September	October	November	December	January	February	March	April	May	June	July	August	Total or average
						Crushing							
						--Million bushels--							
1958	25.1	33.5	33.5	34.4	36.7	34.0	36.0	34.6	36.4	33.2	31.9	29.6	398.8
1959	27.5	35.3	36.1	34.1	34.2	30.9	34.8	33.2	33.2	31.3	31.4	32.1	394.0
1960	26.9	35.6	37.1	38.1	39.0	36.6	34.8	33.0	34.3	31.9	31.0	30.0	406.1
1961	21.0	36.5	38.5	38.7	41.0	36.3	38.8	36.5	38.6	34.3	34.8	34.4	431.4
1962	30.4	39.9	42.8	42.8	42.8	38.8	41.9	36.0	41.1	39.0	38.2	39.0	472.8
1963	[illegible]	40.5	39.4	39.2	36.0	36.6	33.8	35.3	36.3	35.0	37.3	37.2	436.8
1964	36.3	44.3	43.6	43.2	43.0	37.8	40.8	38.2	40.9	37.1	36.6	37.1	479.0
1965	30.4	44.1	48.2	48.9	50.2	45.1	49.4	43.9	50.1	44.7	42.0	40.4	537.5
1966	35.3	45.2	49.6	48.9	50.6	44.6	46.9	47.5	49.2	48.8	47.5	45.4	559.4
1967	42.2	50.4	51.6	50.6	51.2	48.6	48.3	44.6	48.8	47.5	47.6	44.9	576.4
1968	[illegible]	54.7	55.6	52.2	49.9	45.0	55.6	50.4	51.5	50.6	52.1	48.2	605.9
1969	47.5	61.8	62.0	63.1	62.9	58.8	62.9	62.5	67.4	63.7	62.7	62.0	737.3
1970	53.3	66.8	65.9	68.1	67.7	60.1	63.6	63.8	63.8	61.1	62.4	63.6	760.1
1971	54.5	59.5	59.8	64.0	63.9	60.2	63.9	58.5	63.0	57.1	58.2	57.9	720.5
1972	52.2	66.8	70.7	69.2	70.6	64.8	64.4	58.2	61.7	52.2	44.5	46.5	721.8
1973 1/	41.4	62.8	71.8	72.8	74.7	70.4	75.8	69.6	71.7	69.4	72.2	68.8	821.3
1974 1/	53.6	61.6	60.8	60.8	63.3								
						Yield of oil per bushel crushed							
						--Pounds--							
1958	10.8	10.5	10.5	10.4	10.5	10.5	10.6	10.6	10.6	10.7	10.8	10.8	10.6
1959	10.8	11.1	10.9	11.0	10.9	10.9	10.9	11.1	11.0	11.1	11.2	11.2	11.0
1960	11.1	11.0	10.9	10.9	10.9	10.9	11.0	11.0	11.0	11.1	11.1	11.1	11.0
1961	11.0	10.9	10.8	10.8	10.8	10.9	10.9	10.9	11.0	11.0	11.0	11.0	10.9
1962	11.0	10.7	10.6	10.5	10.7	10.6	10.8	10.7	10.8	10.8	10.8	10.9	10.7
1963	10.7	10.9	10.8	10.8	10.8	10.9	10.9	10.9	11.0	11.0	11.0	11.1	10.9
1964	11.0	10.9	10.7	10.8	10.8	10.8	11.0	10.9	11.0	11.0	11.0	11.0	10.9
1965	10.8	10.8	10.6	10.6	10.6	10.6	10.7	10.7	10.7	10.8	10.8	10.8	10.7
1966	10.8	10.7	10.5	10.5	10.6	10.7	10.7	10.8	10.8	10.8	10.8	10.9	10.7
1967	11.1	10.5	10.4	10.4	10.3	10.5	10.6	10.6	10.7	10.7	10.7	10.6	10.6
1968	10.7	10.6	10.5	10.4	10.5	10.6	10.6	10.7	10.7	10.7	10.5	10.9	10.6
1969	10.8	10.7	10.6	10.5	10.6	10.6	10.7	10.8	10.7	10.7	10.6	10.6	10.6
1970	10.6	10.9	10.7	10.7	10.7	10.9	10.9	10.9	10.9	11.0	10.8	10.9	10.8
1971	11.0	10.8	10.8	10.8	10.8	11.0	11.0	11.0	11.1	11.1	11.2	11.2	11.0
1972	11.1	10.7	10.5	10.4	10.2	10.4	10.6	10.6	10.6	10.6	10.6	10.8	10.6
1973 1/	10.6	10.8	10.7	10.6	10.7	10.7	10.7	10.8	10.8	10.9	10.9	11.0	10.8
1974 1/	11.0	10.9	10.3	10.3	10.3								
						Yield of meal per bushel crushed							
1958	47.2	46.9	46.5	47.0	47.6	47.1	47.5	47.2	47.1	47.5	47.7	48.1	47.3
1959	47.1	46.5	46.5	46.7	46.4	46.2	46.0	46.4	46.3	46.8	46.7	46.9	46.5
1960	46.8	46.7	47.0	47.1	47.2	46.9	47.0	46.9	46.6	47.1	47.3	47.1	47.0
1961	47.3	46.7	46.9	47.1	46.9	47.2	46.9	47.0	47.2	47.2	47.4	47.5	47.1
1962	47.5	46.6	47.0	46.7	47.0	46.9	46.7	46.8	47.0	47.1	47.0	47.2	46.9
1963	46.9	47.7	47.7	47.6	47.9	47.3	47.9	47.6	48.3	48.5	49.1	49.0	48.0
1964	48.3	47.5	47.8	47.8	47.8	47.7	48.1	47.6	47.6	47.5	47.7	48.0	47.7
1965	47.6	46.5	47.8	47.5	47.5	47.6	47.5	47.4	47.4	47.9	47.6	48.1	47.5
1966	48.3	47.4	47.3	47.6	47.5	47.8	47.9	47.5	47.6	47.6	47.4	48.1	47.7
1967	48.0	47.4	48.2	47.8	47.8	47.8	47.8	47.7	47.6	47.7	47.7	47.6	47.7
1968	48.2	47.1	47.3	47.3	46.9	47.2	47.4	47.5	47.2	47.6	47.5	48.3	47.4
1969	47.7	47.1	47.1	47.5	46.9	47.2	47.4	47.4	47.4	47.5	47.6	[illegible]	47.4
1970	47.7	47.1	47.1	47.2	47.4	47.7	47.4	47.2	47.4	47.3	47.3	47.8	47.4
1971	47.9	47.2	47.1	47.5	47.2	47.5	47.5	47.4	47.2	47.4	47.5	47.7	47.4
1972	47.6	46.8	47.0	46.7	46.9	47.0	46.8	46.8	47.0	47.0	46.8	48.0	47.0
1973 1/	47.5	46.7	47.0	46.8	47.1	47.1	47.2	47.3	47.2	47.0	47.2	48.1	47.2
1974 1/	48.1	47.6	48.0	47.6	46.8								
						Exports							
						--Million bushels--							
1958	1.6	12.1	15.8	10.2	9.3	8.6	5.0	9.4	9.2	8.9	9.8	5.2	105.0
1959	6.7	12.1	20.4	18.1	10.3	7.7	7.2	8.1	14.4	11.8	9.2	13.9	139.9
1960	8.2	14.1	22.7	20.6	9.1	10.2	8.5	7.7	11.4	7.7	7.7	7.0	134.7
1961	3.6	20.7	23.6	16.5	10.9	10.3	11.0	11.7	12.7	11.9	8.1	8.4	149.4
1962	7.3	22.4	27.4	18.7	3.7	19.3	14.4	14.1	11.6	15.6	14.3	11.8	180.5
1963	7.2	19.8	21.3	21.8	17.0	16.1	13.6	17.6	14.0	13.0	11.9	13.7	187.2
1964	11.1	29.5	27.4	24.4	2.9	11.3	25.0	17.6	17.8	16.1	17.4	11.[illegible]	212.2
1965	4.8	32.3	39.4	31.4	19.6	17.1	21.6	20.2	21.5	19.6	12.1	11.1	250.6
1966	5.5	29.4	40.6	29.8	21.9	20.4	17.5	21.7	21.8	20.0	16.8	16.2	261.6
1967	10.3	29.7	39.9	27.2	21.8	18.8	24.1	21.6	20.1	18.7	17.1	17.3	266.6
1968	13.9	32.8	50.0	38.5	1.2	11.4	36.6	34.3	23.8	14.0	18.2	12.1	286.8
1969	13.3	52.5	53.7	39.9	28.7	31.6	39.2	41.2	37.1	38.5	25.2	31.6	432.6
1970	29.9	44.0	45.3	46.9	35.1	33.0	35.1	3[illegible].8	30.2	35.6	34.4	31.3	433.8
1971	29.2	29.4	47.4	50.3	42.4	35.5	31.3	37.3	31.7	31.1	26.3	24.9	416.8
1972	15.0	54.3	61.2	49.7	47.7	54.7	59.1	45.5	41.0	26.5	14.2	11.0	479.4
1973 1/	7.5	46.6	74.4	58.0	48.6	57.0	59.9	62.0	43.5	36.1	27.1	21.2	542.0
1974 1/	22.[illegible]	32.2	63.2	41.4									
						Average price per bushel received by farmers, United States 2/							
						--Dollars--							
1958	1.98	1.93	1.89	1.97	2.02	2.05	2.07	2.10	2.13	2.09	2.05	1.98	2.00
1959	1.90	1.93	2.00	1.98	2.01	1.99	1.99	2.02	2.00	1.97	1.97	1.99	1.96
1960	1.97	1.94	1.96	1.99	2.23	2.48	2.68	3.02	2.96	2.60	2.48	2.49	2.13
1961	2.24	2.20	2.27	2.30	2.32	2.32	2.34	2.38	2.36	2.34	2.35	2.33	2.28
1962	2.25	2.23	2.30	2.35	2.41	2.50	2.51	2.45	2.47	2.48	2.44	2.45	2.34
1963	2.44	2.56	2.66	2.58	2.65	2.57	2.55	2.45	2.36	2.35	2.34	2.35	2.51
1964	2.51	2.55	2.57	2.71	2.73	2.81	2.85	2.85	2.72	2.74	2.69	2.53	2.62
1965	2.35	2.31	2.36	2.48	2.67	2.77	2.71	2.78	2.90	3.04	3.37	3.49	2.54
1966	2.97	2.78	2.80	2.82	2.77	2.71	2.74	2.71	2.69	2.71	2.66	2.56	2.75
1967	2.55	2.44	2.43	2.48	2.53	2.57	2.57	2.56	2.58	2.54	2.52	2.51	2.49
1968	2.40	2.32	2.40	2.42	2.46	2.48	2.48	2.51	2.56	2.52	2.52	2.51	2.43
1969	2.28	2.23	2.30	2.30	2.36	2.40	2.42	2.48	2.52	2.60	2.72	2.65	2.35
1970	2.66	2.77	2.86	2.77	2.86	2.92	2.91	2.80	2.85	2.98	3.18	3.09	2.85
1971	2.95	2.96	2.84	2.93	2.92	3.00	3.20	3.37	3.35	3.32	3.34	3.36	3.03
1972	3.26	3.13	3.38	3.95	4.11	5.49	6.05	6.14	8.27	10.00	6.69	8.99	4.37
1973 1/	5.81	5.63	5.14	5.65	5.87	6.00	5.96	5.15	5.21	5.13	6.10	7.55	3/5.57
1974 1/	7.32	8.17	7.44	7.03									

1/Preliminary.
2/Season average price includes an allowance for unredeemed loans and purchase agreement deliveries by states.
3/ERS estimate.

ybean exports, by months, actual and percent of

Year	September	October	November	December	January	February	March	April	May	June	July	August	Total 1/
	--Million bushels--												
	ACTUAL												
1960	8.2	14.1	22.7	20.6	9.1	10.2	8.5	7.7	11.4	7.7	7.7	7.0	134.7
1961	3.6	20.7	23.6	16.5	10.9	10.3	11.0	11.7	12.7	11.9	8.1	8.4	149.4
1962	7.3	22.4	27.4	18.7	3.7	19.3	14.4	14.1	11.6	15.6	14.3	11.8	180.5
1963	7.2	19.8	21.3	21.8	17.0	16.1	13.6	17.6	14.0	13.0	11.9	13.7	187.2
1964	11.1	29.5	27.4	24.4	2.9	11.3	25.0	17.6	17.8	16.1	17.4	11.7	212.2
1965	4.8	32.3	39.4	31.4	19.6	17.1	21.6	20.2	21.5	19.6	12.1	11.1	250.6
1966	5.5	29.4	40.6	29.8	21.9	20.4	17.5	21.7	21.8	20.0	16.8	16.2	261.6
1967	10.3	29.7	39.9	27.2	21.8	18.8	24.1	21.6	20.1	18.7	17.1	17.3	266.6
1968	13.9	32.8	50.0	38.5	1.2	11.4	36.6	34.3	23.8	14.0	18.2	12.1	286.8
1969	13.3	52.5	53.7	39.9	28.7	31.6	39.2	41.2	37.1	38.5	25.2	31.6	432.6
1970	29.9	44.0	45.3	46.9	35.1	33.0	35.1	32.8	30.2	35.6	34.4	31.3	433.8
1971	29.2	29.4	47.4	50.3	42.4	35.5	31.3	37.3	31.7	31.1	26.3	24.9	416.8
1972	15.0	54.3	61.2	49.7	47.7	54.7	59.1	45.5	41.6	26.5	14.2	11.0	479.4
1973	7.5	46.6	74.4	58.0	48.6	57.0	59.9	62.0	43.5	36.1	27.1	21.2	542.0
1974	22.9	32.2	63.2	41.4									
	PERCENT OF TOTAL												
1960	6.1	10.5	16.9	15.3	6.8	7.6	6.3	5.7	8.5	5.7	5.7	5.2	100.0
1961	2.4	13.9	15.8	11.0	7.3	6.9	7.4	7.8	8.5	8.0	5.4	5.6	100.0
1962	4.0	12.4	15.2	10.4	2.0	10.7	8.0	7.8	6.4	8.6	7.9	6.5	100.0
1963	3.8	10.6	11.4	11.6	9.1	8.6	7.3	9.4	7.5	6.9	6.4	7.3	100.0
1964	5.2	13.9	12.9	11.5	1.4	5.3	11.8	8.3	8.4	7.6	8.2	5.5	100.0
1965	1.9	12.9	15.7	12.5	7.8	6.8	8.6	8.1	8.6	7.8	4.8	4.4	100.0
1966	2.1	11.2	15.5	11.4	8.4	7.8	6.7	8.3	8.3	7.6	6.4	6.2	100.0
1967	3.9	11.1	15.0	10.2	8.2	7.1	9.0	8.1	7.5	7.0	6.4	6.5	100.0
1968	4.8	11.4	17.4	13.4	.4	4.0	12.8	12.0	8.3	4.9	6.3	4.2	100.0
1969	3.1	12.1	12.4	9.2	6.6	7.3	9.1	9.5	8.6	8.9	5.8	7.3	100.0
1970	6.9	10.1	10.4	10.8	8.1	7.6	8.1	7.6	7.0	8.2	7.9	7.2	100.0
1971	7.0	7.1	11.4	12.1	10.2	8.5	7.5	8.9	7.6	7.5	6.3	6.0	100.0
1972	3.1	11.3	12.8	10.4	10.0	11.4	12.3	9.5	8.7	5.5	3.0	2.3	100.0
1973	1.4	8.6	13.7	10.7	9.0	10.5	11.1	11.4	8.0	6.7	5.0	3.9	100.0
1974													

1/Total may not add due to rounding.

Estimated number of soybean oil mills and processing capacity in the United States, 1963-74

Year beginning September	Processing mills 1/	Annual processing capacity: Total 2/	Utilized 3/	Excess 4/	Ratio of utilized to total	Average per mill: Processing capacity	Capacity utilized 3/
	Number	Million bushels	Million bushels	Million bushels	Percent	Million bushels	Million bushels
1963	132	575	437	138	76	4.4	3.3
1964	125	585	479	106	82	4.7	3.8
1965	125	600	537	63	89	4.8	4.3
1966	129	650	559	91	86	5.0	4.3
1967	135	750	576	174	77	5.5	4.3
1968	134	750	606	144	81	5.6	4.5
1969	132	800	737	63	92	6.1	5.6
1970	130	875	760	115	87	6.7	5.8
1971	123	900	720	180	80	7.3	5.9
1972	117	925	722	203	78	7.9	6.2
1973 5/	113	1,000	821	179	82	8.8	7.3
1974 6/	108	1,100	750	350	68	10.2	6.7

1/Estimate developed by ERS from Census data and trade directories. Includes cottonseed and other oilseed mills that process significant quantities of soybeans.

2/Trade estimates. Estimates shown here are approximations of capacity at the beginning of the marketing year. Capacity fluctuates during any year due to new plants coming into operation and additions to existing mills, some mills becoming dormant (due to explosions, fires, strikes, etc.) and dismantling of older mills.

3/Soybeans actually crushed.

4/Difference between total capacity and soybean utilized (crushed).

5/Preliminary

6/Forecast.

Soybeans: Annual value of products per bushel of soybeans processed and spot price spread, 1963-74

Year beginning September	Value of products per bushel: Soybean oil: Yield 1/	Price 2/	Value	Soybean meal: Yield 1/	Price 2/	Value	Total value	Soybean price: Received by farmers 3/	No. 1 yellow, Illinois points 4/	Spread between value of products and soybean price: Received by farmers	No. 1 yellow, Illinois points
	Pounds	Cents	Dollars	Pounds	Cents	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars
1963	10.92	8.4	0.92	48.02	3.58	1.72	2.64	2.51	2.59	0.13	0.05
1964	10.89	11.2	1.22	47.77	3.48	1.66	2.88	2.62	2.81	.26	.07
1965	10.69	11.8	1.26	47.53	4.02	1.91	3.17	2.54	2.91	.63	.26
1966	10.70	10.4	1.11	47.66	3.98	1.90	3.01	2.75	2.86	.26	.15
1967	10.57	8.6	.91	47.71	3.82	1.82	2.73	2.49	2.61	.24	.12
1968	10.61	8.2	.87	47.43	3.76	1.78	2.66	2.43	2.54	.23	.12
1969	10.66	11.0	1.17	47.36	3.89	1.84	3.01	2.35	2.53	.66	.48
1970	10.83	12.8	1.38	47.39	3.96	1.88	3.26	2.85	3.00	.41	.26
1971	10.98	11.5	1.26	47.43	4.36	2.07	3.33	3.03	3.24	.30	.09
1972	10.59	15.2	1.62	47.04	11.03	5.19	6.81	4.37	6.22	2.44	.59
1973 5/	10.76	30.2	3.25	47.18	7.61	3.59	6.84	6/5.57	6.12	1.27	.72
1974 7/	10.65	40.4	4.30	47.81	7.38	3.53	7.83	7.49	7.69	.34	.15

1/Actual out turns of oil and meal is calculated from Bureau of Census reports.

2/Simple average of monthly cash prices per pound using the following quotations: Soybean oil, crude, tank cars, f.o.b. Decatur, Illinois; soybean meal, bulk, 44 percent protein, Decatur, Illinois.

3/Season average price received by farmers weighted by the estimated percent of the crop sold each month.

4/Simple average of monthly prices.

5/Preliminary.

6/ERS estimate.

7/September-December 1974-75.

Soybeans: Monthly average spot price spread between soybean prices and values of soybean oil and meal per bushel of soybeans processed, 1963-74 1/

Year beginning September	September	October	November	December	January	February	March	April	May	June	July	August	Annual average
	--Cents per bushel--												
1963	1	8	5	2	2	1	1	0	3	8	13	6	5
1964	14	16	15	9	1	2	5	0	-4	-1	8	19	7
1965	45	51	51	27	36	27	9	11	9	13	15	25	26
1966	33	23	12	18	15	16	12	8	6	10	9	22	15
1967	32	11	12	7	8	14	11	7	6	9	13	16	12
1968	36	29	12	1	-1	4	9	4	5	7	6	22	12
1969	37	61	45	56	59	77	53	50	25	24	39	48	48
1970	47	45	36	38	25	16	15	6	10	22	26	23	26
1971	14	19	11	11	8	8	10	8	4	0	8	9	9
1972	23	28	29	100	100	70	0	-17	27	90	117	152	59
1973 2/	143	59	53	132	91	130	41	22	30	29	58	77	72
1974 2/	18	32	1	10									

1/Spot spreads are calculated from simple average monthly cash prices using the following quotations: Soybean prices, No. 1 yellow, Illinois Points; soybean oil, crude, tank cars, f.o.b. Decatur, Illinois; soybean meal, bulk, 44 percent protein, Decatur, Illinois. These data do not reflect actual operating margins since prices are simple averages and do not take into account location differentials or actual purchases and sales of soybeans, soybean oil, and soybean meal.

2/Preliminary.

Estimated number of soybean oil mills in the United States, and soybeans crushed by regions and states, 1969-73

Region and State	Year beginning September														
	Soybean oil mills[1]					Soybeans crushed[2]					Average crush per mill				
	1969	1970	1971	1972	1973[3]	1969	1970	1971	1972	1973[3]	1969	1970	1971	1972	1973[3]
	--Number--					--Million bushels--					--Million bushels--				
Corn Belt:															
Illinois	13	12	11	12	13	175	175	159	158	172	13	15	13	[illegible]	13
Iowa	18	16	16	16	15	99	108	99	114	121	6	8	[illegible]	8	8
Indiana	5	5	5	5	5	53	48	49	44	48	11	10	10	9	10
Ohio	5	4	4	4	4	3	D	D	D	D	1	N.A.	N.A.	N.A.	N.A.
Missouri	3	3	3	3	3	28	28	31	29	30	9	9	10	10	10
Total	44	40	40	40	40	358	359	338	345	371	8	9	8	9	9
Percent of U.S.	33	31	33	35	37	49	47	47	48	45	---	---	---	---	---
Lake and Plains:															
Minnesota	7	7	6	5	4	42	44	43	47	58	6	7	7	9	12
Kansas	4	4	4	4	4	25	D	5	34	33	6	N.A.	1	8	8
Nebraska	4	3	3	3	3	D	D	D	D	D	N.A.	N.A.	N.A.	N.A.	N.A.
Total	15	14	13	12	11	67	44	48	81	91	4	3	4	7	8
Percent of U.S.	12	11	11	10	10	9	6	7	11	11	---	---	---	---	---
Total Central States	59	54	53	52	51	425	403	386	426	462	7	7	7	8	9
Percent of U. S.	45	42	44	45	47	58	53	54	59	56	---	---	---	---	---
Delta:															
Arkansas	11	11	9	7	7	50	37	24	16	20	5	3	3	2	3
Mississippi	15	15	14	14	13	34	34	32	28	30	2	2	2	2	2
Tennessee	8	8	6	6	6	47	55	50	45	58	6	7	8	8	10
Total	34	34	29	27	26	131	126	106	89	108	4	4	4	3	4
Percent of U.S.	26	26	24	24	24	18	17	15	12	13	---	---	---	---	---
All other states	39	42	39	36	32	181	231	229	207	251	5	6	6	6	8
Percent of U.S.	29	32	32	31	29	24	30	31	29	31	---	---	---	---	---
United States	132	130	121	115	109	737	760	721	722	821	6	6	6	6	8

[1] Estimates developed by ERS mainly from Census data and trade directories.

[2] Reported by Bureau of the Census.

[3] Preliminary.

D--Withheld to avoid disclosing figures for individual companies.

N.A.--Not available.

Soybean oil mills 1/: Number of companies and plants, concentration ratios, production and value of shipments for products, Census years, 1947-72

Census year	Companies	Establishments: Total	Establishments: With 20 employees or more	Value of shipments: Total	Value of shipments: Average per establishment	Concentration ratios 2/-- value of shipments accounted for by: 4 largest companies	8 largest companies	20 largest companies	50 largest companies	Primary product specialization ratio 3/	Coverage ratio 4/
	--Number--			--Million dollars--		--Percent--					
1947	105	133	N.A.	585.7	4.4	44	63	81	N.A.	96	80
1954	55	88	69	826.4	9.4	41	64	89	N.A.	88	96
1958	66	117	83	999.2	8.5	40	63	86	99+	87	94
1963	68	102	71	1,473.4	14.4	50	70	88	99+	89	95
1967	60	102	78	2,148.3	21.1	55	76	94	100	86	96
1972	54	94	74	3,357.2	35.7	N.A.	N.A.	N.A.	N.A.	85	9[illegible]

Census year	Manufactured soybean products: Soybean oil: Crude: Degummed	Crude: Not degummed	Crude: Total	Once-refined 5/	Inedible use	Soybean meal and other products: Cake and meal	Soy flour: and grits	Lecithin	Millfeed: (hull meal)	Other byproducts
	Million pounds	Million pounds	Million pounds	Million pounds	Million pounds	Thousand tons	Million pounds	Million pounds	Thousand tons	Million pounds
1947	N.A.	N.A.	1,523	1,335	N.A.	4,178	N.A.	N.A.	N.A.	N.A.
1954	N.A.	N.A.	2,403	2,090	90	5,316	236	31	N.A.	N.A.
1958	N.A.	N.A.	3,870	3,131	62	7,909	214	34	N.A.	N.A.
1963	N.A.	N.A.	4,959	3,915	21	10,463	326	44	N.A.	136
1967	3,887	2,118	6,005	4,961	6/	13,213	461	47	353	90
1972	5,131	2,867	7,998	6,455	6/	16,870	474	67	508	200
					--Volume shipped--					
1947	N.A.	N.A.	1,455	231	N.A.	3,964	N.A.	N.A.	N.A.	N.A.
1954	N.A.	N.A.	2,280	224	84	5,052	200	37	N.A.	N.A.
1958	N.A.	N.A.	3,457	353	59	8,093	261	36	N.A.	N.A.
1963	N.A.	N.A.	4,296	590	24	10,668	363	44	N.A.	137
1967	3,050	1,991	5,041	626	6/	12,844	575	58	311	94
1972	3,991	2,059	6,050	764	6/	17,107	454	69	464	199
					--Value of shipments--					
					--Million dollars--					
1947	N.A.	N.A.	316	58	N.A.	305	N.A.	N.A.	N.A.	21
1954	N.A.	N.A.	306	32	12	390	18	5	N.A.	N.A.
1958	N.A.	N.A.	379	43	4	467	15	5	N.A.	N.A.
1963	N.A.	N.A.	394	62	2	802	19	6	N.A.	4
1967	318	205	523	72	6/	1,072	38	6	15	12
1972	470	234	704	98	6/	1,733	54	10	19	29

1/SIC code 2092. Establishments primarily engaged in manufacturing soybean oil and meal. Establishments primarily engaged in refining soybean oil into edible cooking oils are classified in industry 2096. 2/The percentage consists of the sum of the value of shipments of the largest 4 companies (or 8, 20, or 50 companies), divided by the total value of shipments of the industry. 3/Measures the extent to which plants classified in the industry specialize in making products regarded as primary to the industry; that is, value of shipments of primary products of plants in the industry is expressed as a ratio of the total shipments of all products made by these establishments. 4/Measures the extent to which all shipments of primary products of an industry are made by plants classified in the industry, as distinguished from secondary producers elsewhere; that is, value of shipments of the primary products made by plants classified in the industry is expressed as a ratio of the total shipments of primary products made by all producers, both in and out of the specified industry. 5/Oil treated by alkali or caustic wash. Shipment figures exclude amounts of refined oil which have been further processed by refineries by bleaching, deodorizing, and/or winterizing. Such oils are classified as shortening or cooking oils and are included in industry 2096, Shortening and Cooking Oils. 6/Included with once-refined to avoid disclosing figures for individual companies.
SOURCE: Census of Manufactures. N.A.--Not available.

Salad and cooking oil: Components of margins per 24-ounce bottle, 1973

Costs and profit	Farm value 1/	Marketing functions: Assembling and storage 2/	Marketing functions: Milling and processing	Marketing functions: Wholesaling 3/	Marketing functions: Retailing	Retail price
			--Cents--			
Labor	---	---	1.6	---	3.0	---
Packaging	---	---	9.2	---	.2	---
Transportation	---	---	4/1.3	1.6	---	---
Business taxes	---	---	N.A.	---	.2	---
Depreciation	---	---	N.A.	---	.2	---
Rent	---	---	N.A.	---	.6	---
Repairs	---	---	.1	---	.1	---
Advertising	---	---	N.A.	---	1.1	---
Interest	---	---	N.A.	---	5/	---
Energy	---	---	.8	---	.1	---
Other	---	---	4.3	---	.3	---
Profit	---	---	N.A.	---	.3	---
Unallocated	--	---	14.0	3.5	---	---
Total	21.9	6.2	31.3	5.1	6.1	70.6

1/Based on soybean prices received by farmers at the country elevator less imputed value of byproducts. 2/Difference between price of soybeans, No. 1 yellow, Illinois country shipping points and farm value. 3/Estimated at 5 percent of the retail price plus transportation charges from the mill. 4/Based on "Carload Waybill Statistics" U.S. Department of Transportation for soybeans and soybean oil. 5/Less than 0.1 cent. N.A.--Not available.

Margarine: Components of margins per 1-pound package, 1973

Costs and profit	Farm value: Oil 1/	Farm value: Dry milk solids	Marketing functions: Assembling and storage 2/	Marketing functions: Milling and processing	Marketing functions: Wholesaling 3/	Marketing functions: Retailing	Retail price
				--Cents--			
Labor	---	---	---	1.1	---	2.9	---
Packaging	---	---	---	1.8	---	.2	---
Transportation	---	---	---	4/.7	0.4	---	---
Business taxes	---	---	---	N.A.	---	.2	---
Depreciation	---	---	---	N.A.	---	.2	---
Rent	---	---	---	N.A.	---	.2	---
Repairs	---	---	---	.2	---	.1	---
Advertising	---	---	---	N.A.	---	.6	---
Interest	---	---	---	N.A.	---	.1	---
Energy	---	---	---	.5	---	.2	---
Other	---	---	---	6.9	---	.7	---
Profit	---	---	---	N.A.	---	.5	---
Unallocated	---	---	---	.6	1.8	---	---
Total	13.3	0.7	3.5	11.8	2.2	5.9	37.4

1/Based on soybean prices received by farmers at the country elevator less imputed value of byproducts. 2/Difference between price of soybeans, No. 1 yellow, Illinois country shipping points and farm value. 3/Estimated at 5 percent of the retail price plus transportation charges from the mill. 4/Based on "Carload Waybill Statistics" U.S. Department of Transportation for soybeans and soybean oil. N.A.--Not available.

Vegetable shortening: Components of margins per 3-pound can, 1973

Costs and profit	Farm value 1/	Marketing functions: Assembling and storage 2/	Marketing functions: Milling and processing 3/	Marketing functions: Wholesaling 4/	Marketing functions: Retailing	Retail price
	--Cents--					
Labor	---	---	0.6	---	2.1	---
Packaging	---	---	11.3	---	.1	---
Transportation	---	---	5/2.8	1.6	---	---
Business taxes	---	---	.1	---	.2	---
Depreciation	---	---	.2	---	.3	---
Rent	---	---	N.A.	---	.9	---
Repairs	---	---	.2	---	.2	---
Advertising	---	---	N.A.	---	.2	---
Interest	---	---	.5	---	6/	---
Energy	---	---	.3	---	.2	---
Other	---	---	.4	---	1.1	---
Profit	---	---	N.A.	---	6/	---
Unallocated	---	---	20.0	5.5	---	---
Total	48.8	13.0	36.4	7.1	5.3	110.6

1/Based on soybean prices received by farmers at the country elevator less imputed value of byproducts.

2/Difference between price of soybeans, No. 1 yellow, Illinois country shipping points and farm value.

3/Cost components are for milling only.

4/Estimated at 5 percent of retail price plus transportation charges from the mill.

5/Based on "Carload Waybill Statistics" U.S. Department of Transportation for soybeans and soybean oil.

6/Less than 0.1 cent.

N.A.--Not available.